

**Work Order ID 99329**

April-05-13 1:17:47 PM

**\*99329\***

Page 1

Item ID: D3016-041

Accept

**\*N900040100\***

Setup

Start

**\*NS1\***

Revision ID:

Item Name: Seat Frame Assembly

Stop

**\*NS2\***

Start Date: 4/04/13 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 4/04/13 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan: MCSDate: 13-04-08 Tooling:

Date:

Run

Start

**\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop

**\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3016	RevA / DEO A-1								
100	Weld per dwg A/R 4130 rod Batch: <u>M118875</u>	0.00							
<b>*100*</b>	Large Fab								
Large Fab	Memo	0.00							
Large Fab	1-Cut all tubes as per Dwg D3016								
	2-Deburr								
	3-Assemble tubes, fittings and weld as per Dwg D3016 using welding jig DT8597								
	4-Transfer drill holes from D3017-041 and D3021-041 in seat frame D3016-041								
	5- Assemble brackets and gusset per dwg and weld								
110	QC9- Inspect visual per QSI004- Fusion Welds	0.00							
<b>*110*</b>	QC								
Quality Control	Memo	0.00							

① 02/13-3-17DA 09① 13-04-24

NCR: Yes / No

DQA: Date: \_\_\_\_\_

## **WORK ORDER NON-COMPLIANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Date:

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS										
			Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/> Prod. Eng. Coor. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>									
Part No. _____																
NCR No. _____																
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector							
Doc/Data																
Equip/Tooling																
Operator																
Material																
Setup																
Other																
Process																
Supplier																
Training																
Unapproved																
FAULT CATEGORY																
Landing Gear				General												
Bending				Bend				Grain				Ovalized				Pressure/Forced
Centre Not Concentric to O/S				BOM/Route				Hardware				Over/Under tolerance				Temperature/Cure
Cracks				Broken/Damaged				Inspection Incomplete				Part Incorrect				Weld
Crushed/Crimped.				Burrs				Instructions Incomplete/Unclear				Part Lost/Missing				Wrong Stock Pulled
Cuffs				Contamination				Maintenance				Part Moved				
Heat Treat				Countersink				Mislabeled				Positioned Wrong				
Inspection Strip in Tube				Cut Too Short				Misread				Power Loss/Surge				
Ripples in Bend				Drill Holes				Offset								
Torque Waves in Extrusion				Drawing				Out of Calibration								
Turning Sequence				Finish				Out of Sequence								
Wave/Twist in Tube				Folio				Outside Dimensions								



NCR: Yes / No

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____			DISPOSITION		AGAINST DEPARTMENT/PROCESS					
			Rework Scrap Use-as-is Work Order Update	Skid-tube Machining Thermoforming Large Fab	Crosstube Small Fab Finishing Composite	Water Jet Prod. Eng. Coor. Rec/Store/Packaging Supplier	Engineering Quality Other			
Part No. _____		NCR No. _____								
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector	
Doc/Data										
Equip/Tooling										
Operator										
Material										
Setup										
Other										
Process										
Supplier										
Training										
Unapproved										
FAULT CATEGORY										
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube				<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other						

**Work Order ID 99329****\*99329\***

Page 3

April-05-13 1:17:47 PM

Item ID: D3016-041

Accept

**\*N900040100\***

Setup

Start

**\*NS1\***

Revision ID:

Item Name: Seat Frame Assembly

Stop

**\*NS2\***

Start Date: 4/04/13 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 4/04/13 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

**\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop

**\*NR2\***Sequence ID/  
Work Center IDOperation  
Description

150

Identify as per dwg &amp; Stock Location:

*CA*Set Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp**\*150\***

Packaging

Packaging

Memo

0.00

*IK**EPB 13/04/24*

160

QC21- Final Inspection - Work Order Release

0.00

**\*160\***

QC

Quality Control

Memo

0.00

*13/4/25 JJ**AB 04/25*

NCR: Yes / No

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order:			DISPOSITION			AGAINST DEPARTMENT/PROCESS							
			Rework Scrap Use-as-is Work Order Update	Skid-tube Machining Thermoforming Large Fab	Crosstube Small Fab Finishing Composite	Water Jet Prod. Eng. Coor. Rec/Store/Packaging Supplier	Engineering Quality Other						
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector				
Doc/Data													
Equip/Tooling													
Operator													
Material													
Setup													
Other													
Process													
Supplier													
Training													
Unapproved													
FAULT CATEGORY													
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube				<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio  <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions						<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Other			

# Picklist Print

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Page 1

<b>Work Order ID:</b>	99329	<b>Start Date:</b>	4/04/13	<b>Required Date:</b>	4/04/13								
<b>Parent Item:</b>	D3016-041												
<b>Parent Item Name:</b>	Seat Frame Assembly		<b>Start Qty:</b>	1.00	<b>Required Qty:</b>	1.00							
<b>Comments:</b>	IPP A01.09.19 New issue ECIPP RevB: as per revB DD verified by:JLM												
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M4130NT0.750W.049 4130 RD Tube .750 x.049W		Purchased	No			100	f	42.4218	4.3	4.5263158		EZ 13-4-23	
				<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>				
				MAT033			42.4217893						
					123339		6.6217893						
					124293		35.8						
M4130NT0.500W.049 4130 RD Tube .500 x.049W		Purchased	No			100	f	72.4860	4.3	4.5263158		EZ 13-4-23	
				<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>				
				MAT032			72.486						
					121025		1.82						
					123339		37.716						
					124293		32.95						
M4f30NT1.000W.120 4130 RD Tube 1.00 x .120wall		Purchased	No			100	f	12.8500	1.5	1.5789474		EZ 13-4-23	
				<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>				
				MAT033			12.85						
					124293		12.85						
D3016-17 Gusset		Manufactured	No			100	Each	8.0000	2	2		EZ 13-4-23	
				<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>				
				WA002			8						
					92391		8						
D3016-13 Bracket		Manufactured	No			100	Each	9.0000	2	2		EZ 13-4-23	
				<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>				
				WA002			9						
					92380		5						
					97682		4						

NCR: Yes / No

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS						
			Rework Scrap Use-as-is Work Order Update	Skid-tube Machining Thermoforming Large Fab	Crosstube Small Fab Finishing Composite	Water Jet Prod. Eng. Coor. Rec/Store/Packaging Supplier	Engineering Quality Other					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector			
Doc/Data												
Equip/Tooling												
Operator												
Material												
Setup												
Other												
Process												
Supplier												
Training												
Unapproved												
FAULT CATEGORY												
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube				<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions						<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled	<input type="checkbox"/> Other

# Picklist Print

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Page 2

Work Order ID: 99329

Parent Item: D3016-041

Parent Item Name: Seat Frame Assembly

Start Date: 4/04/13

Required Date: 4/04/13

Start Qty: 1.00

Required Qty: 1.00

D3016-15

Manufactured

No

100

Each

11.0000

2

*EL 13-4-24*

Gusset

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

WA001	8	_____
-------	---	-------

95695	8	_____
-------	---	-------

WA002	3	_____
-------	---	-------

90616	1	_____
-------	---	-------

94464	2	2
-------	---	---

D3020-1

Manufactured

No

100

Each

16.0000

4

*EL 13-4-17*

Fitting

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

WA001	16	_____
-------	----	-------

94656	4	4
-------	---	---

97712	12	_____
-------	----	-------

NCR: Yes / No

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

## **WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: Date:

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS					
			Rework <input type="checkbox"/>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>				
			Scrap <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coor. <input type="checkbox"/>	Quality <input type="checkbox"/>				
			Use-as-is <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>				
			Work Order Update <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data											
Equip/Tooling											
Operator											
Material											
Setup											
Other											
Process											
Supplier											
Training											
Unapproved											
FAULT CATEGORY											
Landing Gear				General							
Bending	Bend	Grain	Ovalized	Pressure/Forced							
Centre Not Concentric to O/S	BOM/Route	Hardware	Over/Under tolerance	Temperature/Cure							
Cracks	Broken/Damaged	Inspection Incomplete	Part Incorrect	Weld							
Crushed/Crimped.	Burrs	Instructions Incomplete/Unclear	Part Lost/Missing	Wrong Stock Pulled							
Cuffs	Contamination	Maintenance	Part Moved								
Heat Treat	Countersink	Mislabeled	Positioned Wrong								
Inspection Strip in Tube	Cut Too Short	Misread	Power Loss/Surge								
Ripples in Bend	Drill Holes	Offset	Other								
Torque Waves in Extrusion	Drawing	Out of Calibration									
Turning Sequence	Finish	Out of Sequence									
Wave/Twist in Tube	Folio	Outside Dimensions									

**DART**

DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>#</i>	APPROVED <i>#</i>	DRAWING NO. D3016	REV. A SHEET 1 OF 3
DATE 01.05.18		TITLE SEAT FRAME ASSEMBLY	SCALE NTS
A	01.05.18	NEW ISSUE	

QTY	PART NUMBER	DESCRIPTION	MATERIAL
X	D3016-041	SEAT FRAME ASSEMBLY	N/A
1	D3016-1	TUBE	AISI 4130N TUBE, Ø0.75 DIA x 0.049 WALL (M4130N-T0750W049)
2	D3016-3	TUBE	AISI 4130N TUBE, Ø0.75 DIA x 0.049 WALL (M4130N-T0750W049)
1	D3016-5	TUBE	AISI 4130N TUBE, Ø0.50 DIA x 0.049 WALL (M4130N-T0500W049)
2	D3016-7	TUBE	AISI 4130N TUBE, Ø0.50 DIA x 0.049 WALL (M4130N-T0500W049)
1	D3016-9	SADDLE	AISI 4130N TUBE, Ø1.00 DIA x 0.120 WALL (M4130N-T1000W120)
1	D3016-11	SADDLE	AISI 4130N TUBE, Ø1.00 DIA x 0.120 WALL (M4130N-T1000W120)
1	D3016-13	BRACKET	AISI 4130N SHEET, 18 GAUGE (M4130N-S049)
1	D3016-15	GUSSET	AISI 4130N SHEET, 18 GAUGE (M4130N-S049)
1	D3016-17	GUSSET	AISI 4130N SHEET, 18 GAUGE (M4130N-S049)
2	D3020-1	FITTING	N/A

NOTES

- 1) WELD PER DART QSI 004
- 2) ON SHEET METAL PARTS, BREAK ALL UNMARKED CORNERS 0.020-0.040
- 3) FINISH: POWDER COAT GREY SANTEX (REF. 4.3.5.6) PER DART QSI 005 4.3
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

UNLTD  
99329 MCT  
13-04-08

**DEO ATTACHED**

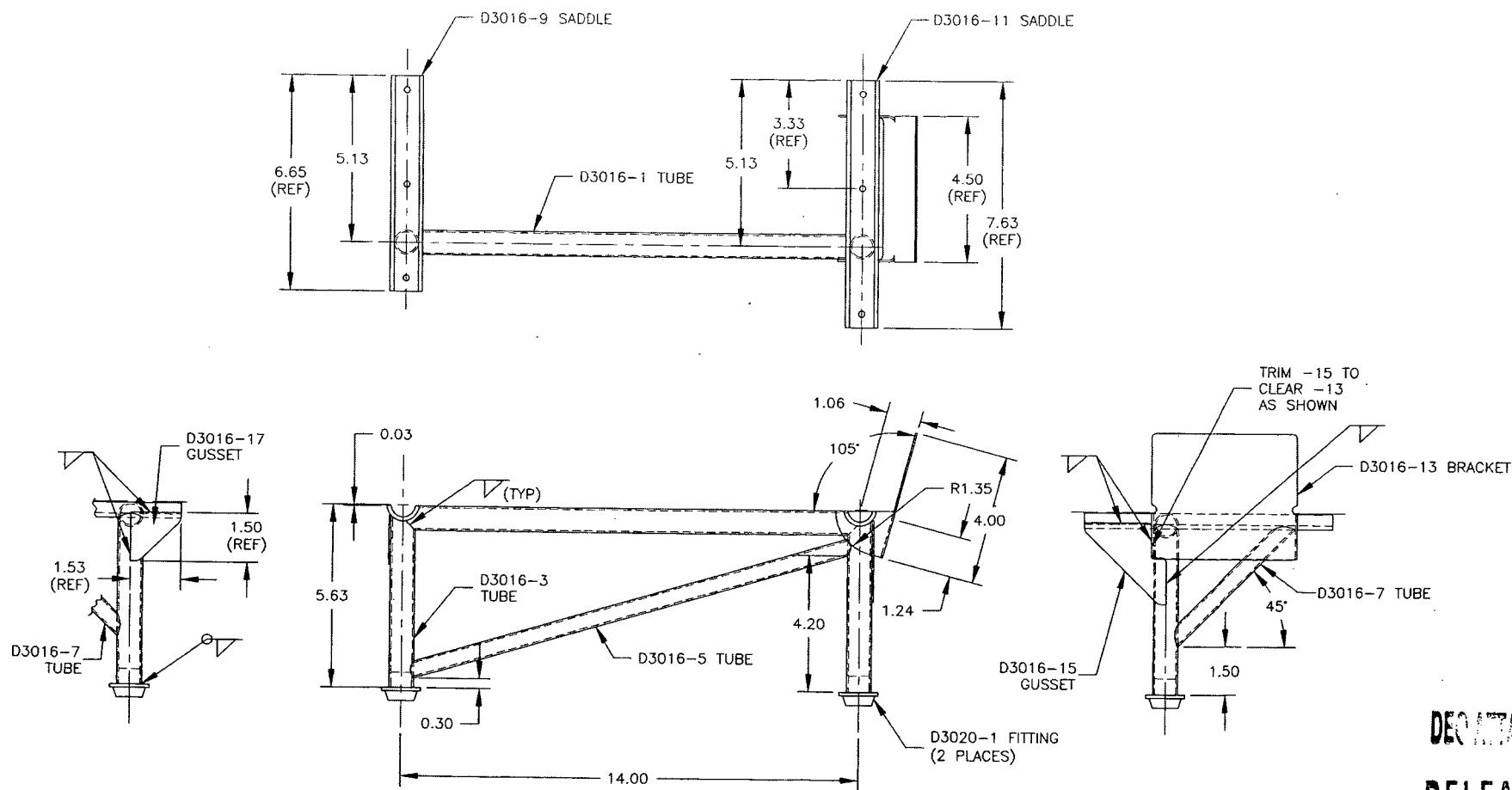
**RELEASED**  
01.05.30

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99329

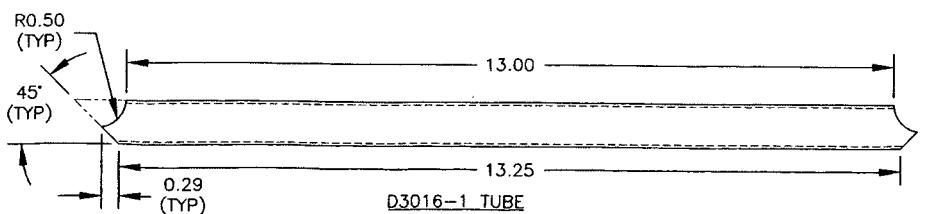
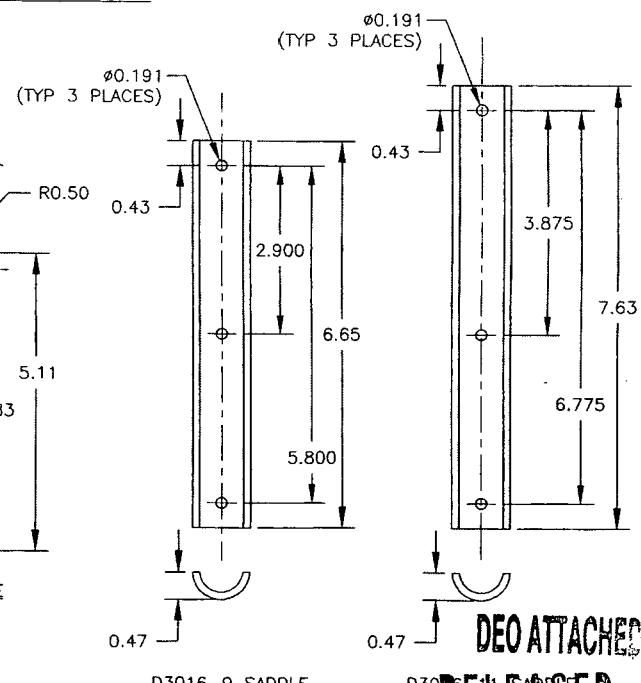
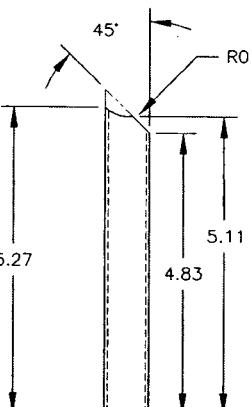
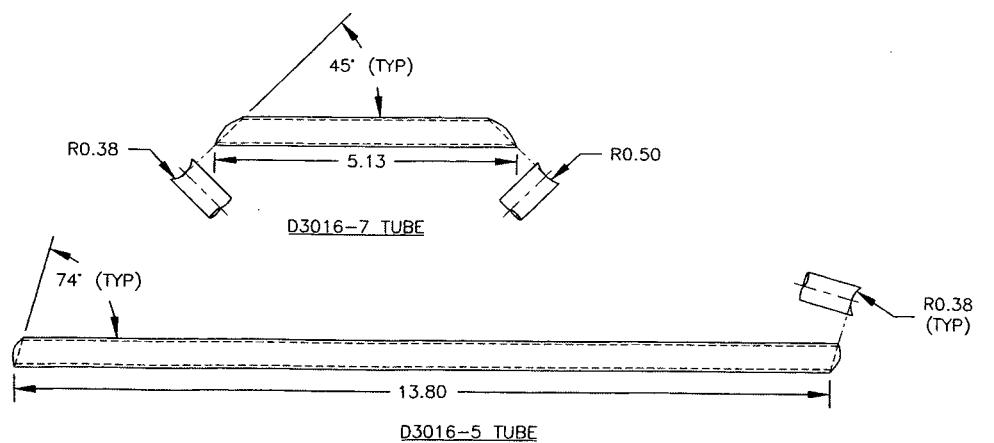
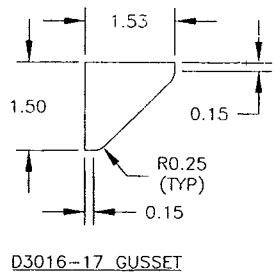
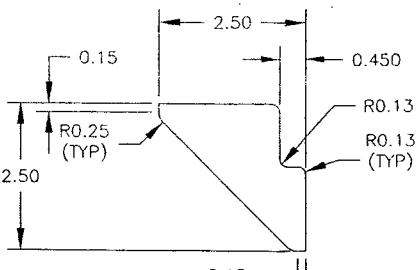
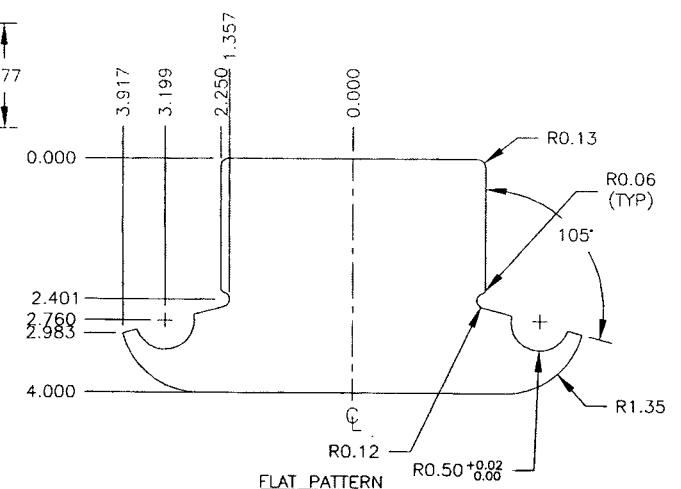
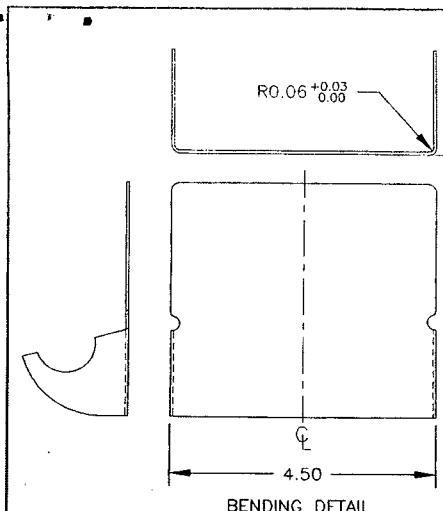
## D3016-041 SEAT FRAME ASSEMBLY



DETACHED  
RELEASED  
01.05.18

COPYRIGHT © 2001 BY DART AEROSPACE LTD.		DESIGN	DRAWN BY	DART	DART AEROSPACE LTD. HANNOVER, ONTARIO, CANADA
CHECKED		CP	CP		REV. A
				APPROVED	DRAWING NO. D3016
				DATE 01.05.18	SHEET 2 OF 3 SCALE 1:3 TITLE SEAT FRAME ASSEMBLY

99329



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DART AEROSPACE LTD.

DESIGN	DRAWN BY	DART	DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA
CP	CP		REV. A
CHECKED	APPROVED	D3016	SHEET 3 OF 3
DATE		TITLE	SCALE
01.05.18		SEAT FRAME ASSEMBLY	1:2

99329

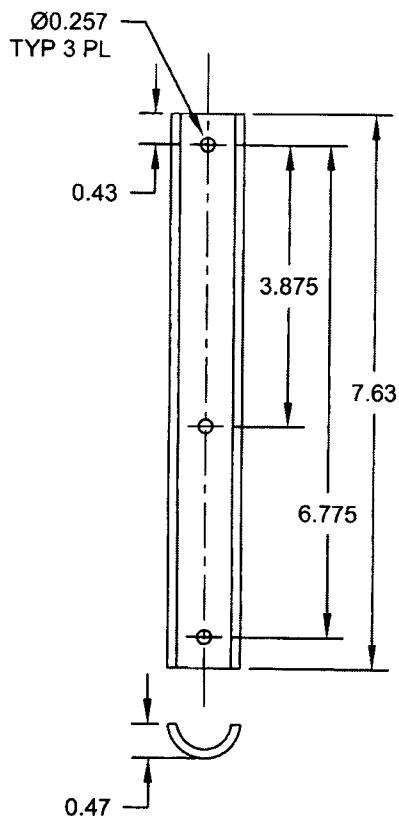
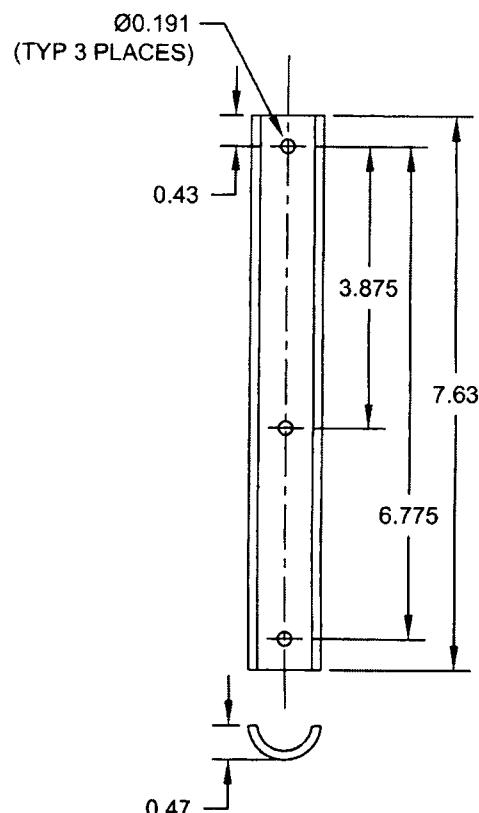
DRAWING NO. D3016	TITLE SEAT FRAME ASSEMBLY	REV. A	DART AEROSPACE LTD ENGINEERING ORDER	D.E.O. NO. D3016-A-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN	CHECKED <i>UR</i>	MFG. APPR. <i>PC</i>	APPROVED <i>MP</i>	DE APPR. <i>W</i>		
DATE 10.01.29	DATE 10.01.29	DATE 10.01.29	DATE 10.01.29	DATE 10.01.29	DATE 10.01.29	

**PURPOSE:**

TO REVISE D3016-11 SADDLE'S HOLE SIZES

**CHANGE:**

DETAIL D3016-11 SADDLE (SHEET 3): Ø0.257 TYP 3 PL WAS Ø0.191 (TYP 3 PLACES) AS SHOWN:

**IS:****WAS:****D3016-11 SADDLE****D3016-11 SADDLE**